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# FALLOUT



and your  
**Farm Food**

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Federal Extension Service  
U.S. Department of Agriculture

# FALLOUT AND YOUR FARM FOOD

To protect yourself, your livestock, and food, feed, and water from fallout after an enemy attack, you need to take special action ahead of time. To be prepared, you should . . .

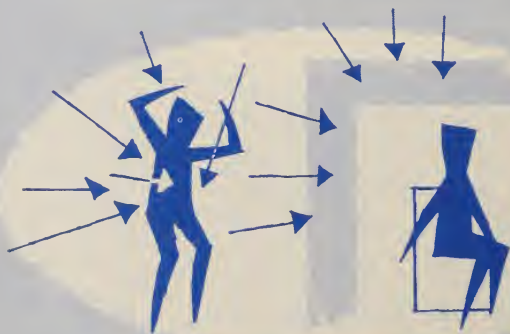
## FIRST, KNOW THE DANGERS

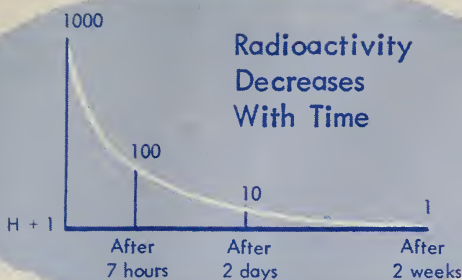
When a nuclear bomb explodes close to the ground, it lifts earth and other materials into the mushroom cloud. Some of these materials mix with the radioactive atoms produced during the explosion, and form radioactive fallout. This dust-like material is carried by winds and might fall anywhere downwind. Most rural areas are outside what are usually considered to be possible enemy targets, and would need protection only from radioactive fallout.

Radiation has a different effect on people and animals than it has on food and water. This is because radiation can damage living tissue, but does little or no harm to nonliving materials. Two main types of radiation are produced by the radioactive elements in fallout—gamma rays and beta particles. Fallout usually contains both types.

## WHAT RADIATION DOES

Gamma rays are like X-rays and can penetrate deep into most materials, including your body. When they do, they can damage or destroy living cells. If enough cells are injured, people (or animals) sicken, perhaps die.





But most gamma rays entering a thick layer of dense materials (such as 36'' of earth) are absorbed before they reach the other side. That is why you can protect yourself by staying in a shelter that provides enough thickness of shielding materials to absorb the gamma radiation; and why your livestock would be safer under cover.

The beta particles in fallout cannot penetrate very far. Ordinary clothing, a tarpaulin or any covering that keeps out dust will keep them out. However, beta particles might cause burns if they get on your skin or in your hair (or on animals) and are not washed off or otherwise removed promptly.

Fallout contains radioactive materials but the radiation from fallout does not make anything else radioactive. If you became ill from radiation exposure, no one else could catch radiation sickness from you—it is not contagious.

Radiation passing through food, feed or water would not make it radioactive; and would not make it dangerous to eat or drink. It is only when radioactive particles get into food supplies that food becomes unsuitable for use. If you consume contaminated food or water, and enough radioactive elements get inside your body, they could cause you internal injury. Therefore, fallout should be kept out of food, feed, and water. Keep them under cover.

If fallout dust gets on or mixes into food supplies, it would be necessary to decontaminate them before they are eaten.

## DANGER DROPS RAPIDLY

In the first days after a nuclear attack, danger from fresh fallout would drop rapidly because many of its radioactive materials, especially those that emit gamma

rays, are short-lived. Nothing can destroy radioactivity except its own decay. Its rate of decrease is the same wherever the fallout is. Fallout which radiates 1000 units 1 hour after the bomb burst (1000 H+1), would radiate about 100 units an hour 7 hours later. Within 2 days it would radiate only 10 units per hour and would be down to 1 unit within 2 weeks. (From then on it would lose its strength more slowly.) If fallout is light or moderate, after 2 or 3 days you might be able to come out of shelter, at least for part of each day. But you will be safer to have enough protected food and water on hand for yourself and your family (and livestock) for 2 weeks or more, in case you are in one of the heavier fallout areas.

## DON'T TAKE CHANCES

After an enemy attack you might not know whether there is or is not any fallout in your area. Sometimes, if there is heavy fallout, it is visible in the air or on smooth surfaces. It might look like ordinary dust or dirt. It may also be invisible and detected only with special monitoring equipment. You cannot smell or taste fallout and cannot feel the radiation from it.

If you don't know whether there is fallout or not, don't take chances. Take shelter.

## WHAT TO DO

1. Prepare a place with enough thickness of shielding materials where, if necessary, you and your family can take shelter. Plan to take care of your animals by putting them in the most protected places.

**Protect Your Food,  
Feed, and Water  
from FALLOUT!**





2. Have on hand enough food, feed, and water for 2 weeks, stored where it will be protected from dust and where you can get to it to supply your family and your livestock, without exposing yourself unduly to dangerous fallout.

3. Keep fallout out of your other reserves of food and water by:

- a. Covering them.
- b. Putting extra food into refrigerator-freezer (which would be safe unless the electricity went off, in which case the food might start to spoil in 2 to 5 days); or in dustproof cabinets, pantries, storerooms, etc.

4. If fallout gets onto cans or packaged containers, remove it by wiping, then washing carefully if water is ample; wear rubber gloves and be sure to clean all ridges or rough edges. Try to prevent any of the fallout from getting into the food. The contaminated water and cloths should be carefully disposed of outside the shelter.

5. Some foods and feed contaminated with fallout may be decontaminated by:

- a. Washing, scrubbing, peeling (root crops).
- b. Taking off outer layers (cabbage or lettuce, etc.)
- c. Removing dusty upper portions (haystack or feed bin).
- d. Other removal methods, depending on the type of food.

Even if there is fallout on growing crops they may be used if they are thoroughly cleaned.

6. You should be careful to wait until radiation levels are down, before working outside. Workers should wear gloves and face masks in dusty operations. Remove outer clothing before returning to shelter, and clean by washing, vacuuming or brushing. Be sure to scrub your skin and hair.

7. Make every effort to protect enough feed and water for your dairy cows. If they eat heavily contaminated feed, it would be dangerous to use the milk right away, especially for infants. If you have babies in your home, be sure to keep enough canned or packaged dry milk in a safe place, to meet their needs. Much of the radioactivity that might be in milk from a cow consuming fresh fallout would decay quite quickly, so the milk or products made from the milk might be usable in 30 to 60 days. The waiting time would depend on fallout intensity, and be longest for infants. Local civil defense authorities are responsible for monitoring, and for instructing you.

8. Even if livestock have been exposed, the meat could be eaten if the animal shows no temperature rise or signs of illness and if workers could be safe from exposure while butchering. Poultry can stand about twice as much radiation as cattle. Chickens and eggs would be one of your more dependable food sources following nuclear attack.

9. Water protected from fallout by covered containers or coming from wells or covered springs that are properly constructed should be all right. If it becomes absolutely essential to use water which might be contaminated, it would be necessary to remove as much as possible of the radioactive material.

Boiling does not destroy radioactivity. The easiest way to remove it would be to mix uncontaminated clay subsoil with the water and allow it to settle out over a period of a day, then strain the clearest part through a paper towel or several thicknesses of clean cloth. (Be sure to dispose safely of the paper and cloth.) Stock water could also be treated by mixing with clay, or stirring up the mud bottom of a pond, then letting it settle out.

## CONTAMINATION NOT EXTENSIVE

It is unlikely that much of our country would have to face a longtime hazard from fallout. Estimates of gamma ray radioactivity from a nuclear attack of 260 weapons totaling 1425 megatons (as assumed in national test exercise Operation Alert '61) indicate that about 75 percent of our land area might receive enough contamination to cause concern. But due to decay, 48



hours later, only about 25 percent of the country would still have dangerous amounts of radioactivity.

Probably only 5 to 10 percent of our lands would have a longer lasting fallout problem. However, some lands would have serious contamination from radioactive decay products, and people might have to move out to safer places. Since no one knows where the winds may carry fallout, no one can know ahead of time where those lands might be. But the problems of radioactive fallout can be "licked" if people know what to do and take actions accordingly.

## REMEMBER . . .

You can protect yourself by keeping radioactive fallout away from you . . .

- keep out gamma rays by remaining inside a fallout shelter until the fallout decays
- keep beta burns away by protecting your skin from fallout dust
- keep radioactive fallout out of your food, feed, and water.

America has an abundant food supply. After a massive enemy attack, there would probably be large supplies of food to meet needs for the emergency, but there could be areas of scarcity due to transportation problems. And America could grow more food. Much of our land areas could be satisfactorily farmed.

You do not know whether your land will ever be in a fallout area. But you do know that your chance of surviving is good if you know the dangers, learn how to protect yourself and your family, and prepare to take necessary actions. Your local agricultural, public health and civil defense specialists will be glad to help you.



## REFERENCES

*Family Food Stockpile for Survival*, USDA Home and Garden Bulletin 77

*Defense Against Radioactive Fallout on the Farm*, USDA Farmer's Bulletin 2107

*Fallout Protection*, U.S. Department of Defense, Office of Civil Defense, H-6

*Family Shelter Designs*, Department of Defense, Office of Civil Defense, H-7

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